To: Dan Castleberry, CALFED Ecosystem Restoration Program
From: ERP Independent Science Board
Date: 14 November 2002
Re: Adaptive Management Experiment

In March 2002 the CALFED Ecosystem Restoration Program Independent Science Board convened a workshop to develop several large-scale restoration concepts into adaptive managements experiments that could be readily implemented by the CALFED Ecosystem Restoration Program (ERP). As you know, the adaptive management approach is one of the fundamental tenets of the ERP but thus far, in the opinion of the Board, it has proved one of the most challenging for implementation. The Board selected three topics for discussion that each provide opportunities for the near-term development and implementation of restoration actions as adaptive management experiments:

- Experimental flow manipulation.
- Experimental floodplain inundation.
- Experimental manipulation of delta habitat configurations

The workshop was limited to those with expertise in these areas and also attracted great interest from the broader ecosystem restoration community. Over 60 people attended all or part of the two-day workshop (attendee list attached). The three topics were discussed in separate breakout sessions and shared amongst the group during a final plenary session.

Since the workshop Board members and other interested parties have compiled reports from the breakout sessions. These reports of deliberations have been provided to breakout session participants for comment, in some cases several times. The nature and content of the reports are as varied as the subject matter they cover, as might be expected given the diversity and complexity of the issues addressed. Consequently, in addition to providing the reports themselves for your consideration, the Board proposes for each of the topics specific steps that should be taken by ERP or other identified parties to move these experiments towards implementation.

Each topic faces substantial challenges to implementation that are not technical in nature. These proposals will be most effectively moved forward if staff associated with ERP can be dedicated to the effort. Dedicated staff that can ‘champion’ the projects and engage in outreach to stakeholders will be necessary to ensure that as the technical matters described in the ‘next steps’ documents are addressed, progress is also being made on these implementation issues. The Board recommends that for each topic ERP identify key staff that can champion issues, track progress and provide necessary feedback to ERP and the Board. To assist in the effort, the Board has identified one of its members for each topic to liaise between ERP, other interested agencies and the Board – Peter Moyle (Floodplains), Wim Kimmerer (Flows), and Denise Reed (Delta Habitats).

The Board believes that acting on these recommendations is the most effective way to move the ERP towards implementing adaptive management experiments. If the CALFED ERP is truly to abide by adaptive management as a fundamental basis for its actions, this opportunity to build on the expertise of scientists, stakeholders and resource managers should not be put

aside. The Board urges ERP to take the first of the next steps recommended for each topic and commit to furthering the work begun at the March 2002 workshop.

The Board stands ready and willing to advise and assist as necessary to further develop these experiments and implement the adaptive management principles of the Program.

Sincerely,

Bob Twiss
Wim Kimmerer
Co-Chairs, ERP Independent Science Board

Attachments:
Next steps reports:
- Flows
- Floodplains
- Delta habitat

Flows report
Yolo Bypass report
Delta habitats report

Next Steps - Flow enhancement project

The concept paper is lacking in details, and a lot of attention needs to be paid to experimental design and site selection. In particular, the preferred alternative (B, geomorphic flows) could require more water than can be purchased using EWP or other ERP mechanisms. Therefore this project should be developed stepwise. Because the project is complex and at present has no natural advocate, a dedicated staff person associated with the ERP or the Science Program should be assigned to manage this project and move it forward. This person should have a scientific background and experience in managing large projects.

Develop preliminary design
Information on base flows and flows expected to provide the geomorphic alterations envisioned in the concept paper should be developed for both the Tuolumne River and Clear Creek. This information should be assembled into a preliminary design document. The document should describe the relationship between the quantity and timing of water release down the streams, and the expected extent of both geomorphic alteration and elevated flow for spawning or other biological activities. The principal focus of this document would be to provide information necessary to decide whether to proceed; issues of experimental design would mostly be deferred until a later stage. This report should be prepared under contract through a suitable funding mechanism from CALFED, with no commitment for further funding.

Workshop on flows
Interested parties and technical experts would be invited to a workshop convened by ERP or the Science Program to discuss the potential purpose of the manipulations, the advantages and disadvantages of alternative locations, and the expected costs and benefits.

Decision point: A decision would be made by ERP based on the above report and workshop results. Among the choices: Proceed as planned on one of the streams; proceed tentatively pending further information or analysis; hold off for further information or analysis; reject the design and request an alternative; or do not proceed further on the concept. The following steps assume that the conclusion is to proceed.

Develop Experimental design
The design would be fleshed out in response to comments, and to develop fully the experimental aspects. A budget and schedule would be prepared. This design document would then be circulated for comment by ERP, and amended as appropriate.

Implement project
This step would include permitting and environmental compliance, and should be phased according to details developed during the design phase. The contractor should be selected via a competitive process that considers experience and qualifications as well as bid price. The awarding of this contract would require more hands-on oversight, particularly of the experimental aspects, than is usual for PSP funded projects. This should be clear to the contractor and ERP may need to dedicate staff time accordingly.

Next Steps - Floodplains - Yolo Bypass project.

The concept paper lays out some next steps. Potential impediments to starting this project may exist, although the concept paper says that the landowners are on board. It is important to ensure stakeholder involvement as this proposal moved forward and ERP should ensure outreach activities that effectively engage stakeholders are an ongoing aspect of these next steps are taken. The following tasks need to be accomplished prior to Implementation.

Develop design

The concept of the experiment needs to be developed to include a thorough conceptual model, the development of a relatively simple simulation model to explore alternative hypotheses particularly about the magnitude of effects, and preliminary engineering design of the project. This design must include a thorough monitoring and research plan that will enable the hypotheses to be tested and uncertainties resolved. This should spring from the conceptual model, and should use the conceptual model and simulations as a basis for choices about what to monitor, where, and how often.

This task should be undertaken by a team with understanding of the Yolo Bypass system, experience in scientific investigations, and knowledge of state of the art monitoring protocols.

Lay groundwork

Several questions need to be answered, including: where will the water come from, what the issues are with THM formation potential and mercury methylation and other potential water quality impediments to the project and how can they be overcome.

ERP should convene a focused workshop to further develop these topics and identify research tasks to be addressed prior to issuing a competitive call for research proposals, possibly via the Science Program.

Coordination:

This project will have to interact with a number of groups, to address ESA requirements, water sources, and interaction with other ongoing system manipulations and management. ERP should convene a work group to develop the necessary interagency coordination and to interface with those leading the efforts to develop the experimental design (see 1 above).

Next Steps - Delta Habitat Project

This proposal is conceptually well rounded but lacks specific information regarding project design, and research and monitoring components due to the difficulty of identifying specific locales for implementation during the workshop. One of the major challenges to moving forward is identifying specific parcels where the restoration experiment could be conducted, using the suggestions by the workshop team as a starting point. Once lands have been identified, CALFED ERP should fund the development of a detailed proposal and consider funding implementation. The following steps are recommended:

Confirm Land Availability.
Convene a meeting of parties knowledgeable of the current status (ownership, land use, management regime, physiography, substrate, etc) of the candidate tracts. Inventory existing information and verify the existence of available lands at appropriate elevation for the experiment in both east and west Delta locations.
ERP could convene the meeting with a contractor to provide support and to follow up with inventory of information discussed.

Develop Detailed Experimental Design.
Develop a detailed project implementation plan to include preliminary engineering and design, any necessary site surveys including geotechnical, and a detailed monitoring and reporting plan. The monitoring plan should be in accordance with, but not necessarily limited to, the protocols to be used by the CALFED tidal wetlands monitoring program. Where this detailed experimental design deviates from the experimental concept developed during the AM workshop, the advocates should clearly describe and justify their suggested modifications.
CALFED should solicit proposals from experienced and qualified parties.

Conduct Experiment.
All necessary permits and agreements/easements should be obtained for the project as developed, and the experiment conducted in accordance with the detailed experimental design.

CALFED ERP, with assistance as appropriate from Science Program staff and the Independent Science Board, should issue necessary contracts to implement the project (including permitting) and conduct the experiment. A Steering Committee should be formed to assist ERP in reviewing progress and project performance, and providing guidance to parties responsible for monitoring, reporting and operations/maintenance of the restoration project.